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ABSTRACT

A class size reduction (CSR) program was implemented in a large low-performing urban elementary school district. The CSR program helps schools improve student learning by hiring additional teachers so that children in the early elementary grades can attend smaller classes. This study used a participant-oriented evaluation model to examine the impact of the CSR program on participating teachers and principals. Qualitative data were collected via unstructured interviews and triangulated with observations and document analysis. The analysis, based on the grounded theory model, yielded basic themes found in prior research regarding the impact of CSR on teachers' attitudes and beliefs about student learning, teaching, and family context knowledge. Teacher job satisfaction and morale were higher in reduced class size classrooms. The program was very popular among participating teachers and administrators. Small group instruction and diagnostic testing were used more often in smaller classes. Teachers gave students more personal attention in the reduced class size environment. Most teachers felt that the levels of communication and interaction with parents increased notably since the implementation of the CSR program. Some principals experienced problems in relation to number of students enrolled and space limitations. (Contains 39 references.) (SM)

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Voices from the Field: The Perceptions of Teachers and Principals on the Class Size Reduction Program in a Large Urban School District

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Abstract

A Class Size Reduction (CSR) program was implemented in low-performing elementary schools in the 26th largest urban school district in the nation. The CSR program is an initiative to help schools improve student learning by hiring additional teachers so that children in the early elementary grades can attend smaller classes. A participant-oriented evaluation model was utilized to understand the impact of the CSR program on teachers and principals in the participating elementary schools. Qualitative data were collected mainly using unstructured interviews and triangulated with observations and document analysis. The analysis, based on the grounded theory model, yielded basic themes found on prior research regarding the impact of CSR on teachers' attitudes and beliefs about student learning, teaching, and family context knowledge. Implications for practitioners, policy-makers, and future research are discussed.

Keywords: Class Size Reduction, K-12, participant-oriented evaluation, socio-cultural research, program evaluation

Voices from the Field: The Perceptions of Teachers and Principals on the Class Size Reduction Program Implementation in a Large Urban School District

Class size reduction (CSR) has long been regarded to be instrumental in improving student learning. Along with parent involvement and time on task, these three factors remain among the top predictors of student achievement. This is because the number of students represents a major difficulty for teachers in managing and instructing their classes. However, according to some research (Cooper, 1989; Slavin, 1989), the increased achievement that has been linked to smaller class size is generally limited in terms of effect size. Recent evidence suggests, however, that class reduction is not only an effective strategy but also one that serves students at risk particularly well (Finn and Achilles, 1999). A critical issue in this controversy is the role of a key mediating factor that is defined by the extent to which teacher alter their instructional practice when class size is reduced. When teachers do not change their strategies or provide extra assistance to students in need, it is unlikely that this factor will produce improved achievement. To date, potential changes in teacher practices have not been thoroughly researched (Stasz & Stecher, 2000).

Reducing class size appears to have other benefits that indirectly might improve instruction and meaningful learning. Smith and Glass (1980) found positive changes in teacher attitudes toward students, morale and satisfaction with their own teaching. CSR might also be linked to more effective small group activities in terms of organization, monitoring and the quality of expert assistance. In the Tennessee class size experiment, Finn and Achilles (1999) reported that beneficial effect for minority students are approximately double than those for White students in Grades K-3. Krueger (1999)

also reports larger positive effects for minority students in the Tennessee experiment. But as Grissmer (1999) argues, possible bias due to deviations from ideal experimental conditions should be analyzed. For example, schools were not randomly selected. The selection of schools is important for generalizability. The CSR program net effect becomes more complicated to unravel if non-school variables affecting learning are included in the analysis (Munoz, Clavijo, & Koven, 1999; Munoz & Dossett, 2001).

The CSR program has the goal of impacting student learning by integrating additional certified teachers to ensure that class size –particularly in the early grades will be reduced to no more than 18 children per class. The assumption underlying the CSR program is based on a growing body of research that suggests that students attending small classes in the early grades make more rapid educational progress than students in larger classes, and that these achievement gains persist well after students move on to larger classes in later grades. Finn and Aquilles (1999) stressed the finding that teachers report more "on-task" behavior and engagement in learning, not only in small classes in second grade, but after being returned to large classes in fourth grade. According to these researchers, the children on-task behaviors may be due to more teacher attention, greater opportunity to participate, and other reasons. Quasi-experimental studies show statistically significant effects from CSR programs in early grades in all subjects tested from kindergarten through eight grade. However, the size of the effects is hard to pin down because it is dependent on many contextual variables such as type of students and teachers, as well as changes in practices (Hanushek, 1999).

Quantitative studies show that the CSR program might have an important impact on student achievement, particularly for low-income and minority students. According to a recent RAND report (Grissmer et al, 2000) that utilized NAEP data, lowering pupil-teacher ratios for students in lower grades in states with low SES has very large predicted effects. A stream of quantitative research has analyzed the issue from multiple perspectives, especially in Tennessee. Nevertheless, a qualitative research approach might prove useful to understand the dynamics underlying the typical benefits found for CSR programs at this time. Few studies have examined CSR programs from the perspective of key stakeholders such as teachers and principals (CSR Research Consortium, 1999; Stasz & Stecher, 2000). For any educational reform effort to be successful, it is important to understand "what happens" when organizational changes are introduced at the classroom level from the perspective of those involved directly with the changes (Worthen, Sanders, and Fitzpatrick, 1997).

The purpose of this study was to conduct a grounded-theory qualitative study on the CSR program in a large urban school district. The authors' theoretical perspective is based on cultural psychology (Cole, 1996) and sociocultural research (Vygotsky, 1978; Wertsch & Blivens, 1992) that posits vigorous social communication processes as the key mechanism for learning. Learning is conceptualized as inextricably connected with socio-cultural factors (Portes, 1996). This is because the mental functions of the individual are generally predicated by participation and observation in social interactions. CSR affords greater social interaction between individual students and the teacher or more advanced peers in collaborative work.

Research Context

In 1990, the state mandated a complete restructuring of the public elementary and secondary system. The current main parts of the state educational and testing system include (a) the core content, (b) core content tests, and (c) accountability. The first element, the state core content is a document that describes what students should know and be able to do in each grade. it sets high standards for students and helps the teachers plan instruction. The state core content tests measure how well students have mastered the core content; it measures how well the schools, teachers, and students are meeting the high standards set by the state with the input of multiple stakeholders. Students also take a national basic skills test (Comprehensive Test of Basic Skills); this national basic skills test allows to compare the achievement of the state students with the achievement of students throughout the nation. The set of tests are given every year in every school to measure their academic progress of their students. The tests use multiple-choice, essay-like questions, and writing samples to measure how well students know a subject and what they can do with what they know. Finally, the accountability piece, is the way of using all the test scores and some other non-cognitive measures to tell schools, parents, and taxpayers how well each school is performing. The non-cognitive measures include dropout rates, attendance figures, retention rates, and successful transition to adult life. The cognitive and non-cognitive dimensions make up the formula for school improvement. This helps schools to keep on continuously improving. Schools that perform well on the tests often receives reward; on the other hand, schools that do not achieve so well, normally receive additional support such as highly skilled educators and scholastic audits to identify needs to help them

perform better. Falling below an "assistance line" on their growth chart identifies the lowest performing schools.

The district under study is among the 30th largest school districts in the United States. The school district serves more than 96,000 students from preschool to grade 12. The school district has a vision for long-term student achievement. The school district vision, entitled "Beyond 2000," was designed to assure that every student would acquire the fundamental academic and life skills necessary for success in the classroom and workplace. The vision commits the school system to educate each student to the highest academic standards.

In summary, the state's public school system holds schools accountable for continued progress. Under this system, each school will have a customized growth chart to show the level of student achievement that is expected each year until the year 2014. Schools are expected to have a score of 100 on a scale that goes from zero to 140 by the year 2014. The population targets of the program are schools facing challenges in term of student achievement as measured by the accountability testing system.

Research Question and Analytical Approach

The overarching question that guided this investigation was to explore the beliefs, insights and attitudes of teachers and principals participating in the CSR program. Ancillary questions concerned the implementation of the program, the impact on students' academic and non-academic measures, the impact on parent-teacher relationships, and obtaining useful feedback for improving the program.

The participant-oriented evaluation approach (Worthen, Sanders, & Fitzpatrick, 1997) was utilized in the CSR program evaluation. The level of involvement of multiple stakeholders distinguishes the participant-oriented approach to evaluation. The participant-oriented approach allows for the consideration of different perspectives. No one view of the program reflects truth and, thus, the evaluator must seek many different perspectives to understand the evaluation object in its totality (Guba & Lincoln, 1989; Patton, 1994; Stake, 1967; Stake, 1995). An evaluator who follows a participant-oriented evaluation approach typically uses: (a) inductive reasoning, (b) a multiplicity of data, (c) a plan that emerges during the evaluation, and (d) multiple rather than single realities.

Stake (1995) argues that the central focus of participant-oriented evaluation is the focus on concerns and issues of the stakeholders. The ultimate test of an evaluation study, validity, is the extent to which the evaluation increases the audience's understanding of the entity under evaluation. Corroboration of data through crosschecking and triangulation are two methods used by naturalistic evaluators to establish credibility of the findings (Guba & Lincoln, 1989). Under the participant-oriented evaluation, a sample of key persons involved in the implementation of the CSR program were interviewed and observed to better understand how CSR impacts educational processes.

Method

Units of Analysis

Case studies are the preferred research strategy under certain conditions such as: (a) when investigators have little control over events and (b) when the focus is on a

contemporary phenomenon in some real-life context. A participant-oriented approach to evaluation is similar to case study research (Yin 1994). This case study fits these criteria and was conducted as the program was implemented in the 2000-2001 school year. In total, 40 key stakeholders from eight of the 34 schools participating in the program were interviewed. The sample was selected based on the maximum variation sampling technique, which involves selecting cases that illustrate the range of variation in the phenomena to be studied (Gall, Borg, & Gall, 1996).

The criterion used to select the sample of CSR elementary schools was to be located in the upper, average, and lower end of the continuum on the CATS scores. The schools in the program included two low-performing schools, four average-performing schools, and two high-performing schools. The stakeholders participating in the interviews were (a) 32 teachers responsible for planning curriculum and delivering instruction and (b) eight principals involved with program development and administration.

Instrumentation

Interviews with CSR teachers served as the primary database for the study, with additional data coming from non-structured observations and documents related to the school plans. The interviews lasted about one hour and followed a semi-structured format (Merriam, 1988) to encourage genuine and unhindered responses. The semi-structured format used during the interviews involved the interviewer asking questions to direct the teacher responses toward the topic of interest, but did not involve a specific protocol. Each interview began with the interviewer asking participants to describe their involvement with the CSR program. After this, the focus of the interview shifted to the

implications of the CSR program to their experience in the classrooms. The same interviewer conducted 30-minute follow up interviews with 50% of the participants as a form of member validation. The participants read transcripts of their first interviews and offered clarifying statements and additional comments. The interviews were conducted in the office of the principal or in a teacher study lounge. All interviews were recorded by taking notes and transcribed verbatim to word processor.

The researchers conducted non-structured classroom observations in all the participating schools for purposes of data triangulation and member checking. The researchers collected detail notes about instructional activities, instructor-student and student-student interactions and use of instructional materials. Documents regarding the schools plan were obtained from the school district central office. These data helped delineate the topics discussed in the interviews, as well as supported emerging ideas about these participants' conceptions of teaching in small classrooms.

Data Collection and Analysis

The data were gathered from multiple methods including interviews, observations and documents. The primary source of data consisted of in-depth, semi-structured interviews regarding perceptions about the advantages and disadvantages of the CSR program. A secondary source of data consisted of classroom observations in the selected schools (e.g., level of student engagement in learning as on-task behavior). Field notes were also made throughout the site visits during the evaluation of the program. Field notes documented such factors as the nature of student-teacher interactions and the types of concerns expressed by stakeholders such as the principals.

A comparative case study can be based on the grounded-theory paradigm (Glaser & Strauss, 1967; Strauss & Corbin, 1990) that is guided by initial concepts, but can shift or discard them as the data are collected and analyzed (Marshall & Rossman, 1989, p. 113). Data collection and analysis occurred simultaneously. This process was continued throughout the study. In employing the constant comparison method (Glaser & Strauss, 1967 for comparing segments within and across categories, the meaning of each category, and distinctions between categories were studied in deciding which categories were most important to the study (see Gall, Borg, & Gall, 1996, p. 566-567).

Ongoing analysis influenced the scope and direction of succeeding observations, interviews and document collections. Triangulation of findings was achieved by the use of multiple data collection methods, as well as by independent data analysis with other stakeholders involved in the evaluation at JCPS (Bogdan & Biklen, 1998). Coding processes included identifying concepts embedded within the data, organizing discrete concepts into categories, and linking them into broad, explanatory themes (Strauss, 1987; Strauss & Corbin, 1990). The emerging categories presented below served as the filtering lenses through which the interview transcripts, filed notes, and documents were examined. Data were first coded into categories related to the teachers' conceptions about student learning, teaching, and family context knowledge. Approximately twelve coding categories were initially generated from the data. Over time, the number of coding categories was reduced by eliminating and merging categories and by clustering still other categories based on perceived connections. This repetitive process eventually led to the construction of qualitatively distinct themes.

Results

After coding all the collected information, three distinct overarching themes were found on this research: (1) CSR impact on students, (2) CSR impact on teachers, and (3) CSR impact on family context knowledge. The CSR impact on students was sub-divided in (a) cognitive and (b) non-cognitive dimensions. The CSR impact on teachers was sub-categorized on (a) working conditions and (b) instructional methodologies and techniques. No further sub-categorization was used for the family context knowledge category.

One of the main findings, after visiting, interviewing, and observing a sample of eight participating schools, was that principals and teachers are very enthusiastic about lowering the class size from 24 to 18 students for a number of interrelated reasons. Teachers stated the importance of the program and according to one participant interviewed,

> "I think that having fewer kids makes a huge difference in the classroom; that is something that you know if you are a teacher. For people who have never been a teacher or have been away from teaching for too long, they don't understand, that is a different story..."

CSR Impact on Students

Principals and teachers reported benefits to students in both cognitive and non-cognitive dimensions. In terms of cognitive benefits, teachers have more instructional and contact time. In addition, teachers can provide better attention to individual needs, especially for those facing barriers to learning. According to the teachers' perception, CSR are helping student's cognitive development. According to a teacher, "I now simply

have more time to look at my core content for assessment with more intensity." There is a general climate of high expectations on student achievement (e.g., scores on state assessment).

In terms of other benefits, teachers are experiencing an increase in levels of attendance, less disciplinary problems, and less time spent on classroom management activities. Besides, there are higher levels of "student-teacher connection," which makes easier to develop better understanding and communication with each student. According to the teachers interviewed: "having few kids makes a big difference in terms of behavior because students do not need to act out to receive our attention." As a result, teaching and learning was believed to proceed very effectively.

In general, both principals and teachers agree that cognitive and non-cognitive benefits for students are more likely to be found on a long-term basis. In fact, the impact on achievement is expected only when participating students are examined three or more years after CSR is instituted. In general, schools look forward to the program renewal because it supports priorities, namely, learning and student achievement.

CSR Impact on Teachers

Principals and teachers cited many benefits for themselves. Principals stated that higher levels of personnel morale have been present since teachers had fewer students in their classrooms. In this regard, principals argued that the CSR program provides them with an opportunity to keep "pressure for improvement" at the teacher level.

Teachers at two different levels have felt the impact of CSR: (a) working conditions and (b) instructional methodologies and techniques. In terms of working conditions, teachers experience "higher levels of satisfaction and morale," and "lower

levels of stress." Teachers are "enjoying being in the teaching-learning profession," and "the pressure for accountability is better handled." Teachers feel more responsible in classrooms with fewer students because "it allows students to work in small groups." Particularly, new teachers experience a better entrance to their teaching career. Various teachers said: "what is good for the mother (teacher) is doing good for the child (student)".

Teachers have implemented some changes in their instructional methodologies and techniques. According to teachers, teaching and learning are positively affected by having fewer students in the classroom. Some of the common instructional issues are the student-centered approach, which becomes closer to reality according to their perceptions in a class with fewer students. The student-centered approach promotes centering all teaching activities on students learning needs. Other practices found noteworthy are more individualized instruction, small group activities, manipulative learning, experiential learning, hands-on learning, and better implementation and use of diagnostic tools.

Some of the teachers that were interviewed asserted: "every body can understand the big difference." This theme emerged more than once, suggesting that CSR is a "no brainer" with obvious benefits that only the most distanced from education might miss. According to principals and teachers, an adjustment in instructional methodologies and techniques are occurring in various schools. CSR is motivating teachers to explore new avenues for teaching students. Even experienced educators are now exploring and experimenting with new ways of "doing things around here." This trend is expected to have positive impact on student achievement. For example, one of

the teachers mentioned: "the program enables to really think about implementing best practices."

Another teacher argued that "now, there is more time to learn and use more diagnostic instruments." The diagnostic tests provide information to the teachers that will enable them to make instructional decisions. Cited diagnostic tools included the Clay Observation Survey, Silvaroli' Classroom Reading Inventory, Writing Diagnostics, and the Stanford Diagnostic Tests (reading and mathematics).

Although most of the comments were very positive in relationship to the use of best practices and diagnostic tests in a class size reduced environment, it must be mentioned that some teachers presented some level of skepticism. For instance, a teacher said: "Not all teachers are taking advantage of the classroom with fewer students. Some teachers continue to teach in the same old style."

CSR Impact on Family Context Knowledge

The majority of teachers expressed that the levels of communication and interaction between parents and teachers have notably increased since the implementation of the CSR program. Personal relationships between parents and teacher are occurring more frequently than before. Therefore, teachers have more knowledge on family issues that are affecting students' learning process. According to one of the participating teachers, "there is less need to contact a parent because of poor student behavior." This element is especially helpful with students having special needs in learning. According to a teacher, "creating a parent-teacher relationship takes time. The lower the number of students, the more chances to develop an in-depth cooperative relationship that will promote learning." In this regard, another participating

teacher mentioned that "CSR means more personalized, individual attention to my kids; I have more time to do it when I have fewer students in my classroom."

Teachers believe that their duties extend beyond the boundaries of the classroom, specifically by engaging parents in the learning process of their children. As one teacher stated: "I need parents to be partners. Their child education is our common responsibility." In the same line of thought, another teacher expressed the importance of having parents as integral allies in the education of disadvantage children. An educator said: "As teacher, I need to work closely with the parents of my students. I am not supposed to be their friends, though. What I need to find out is how they [parents] can support learning at home." Overall, teachers argue that, by having fewer students in the classroom, CSR sets the condition for increasing the levels of parental involvement.

Many of the teachers interviewed also found the CSR program critical for early identification of family issues affecting student learning. For example, a teacher said: "if you have an empty stomach and a difficult environment at home, it is just more difficult to concentrate and learn." However, according to another teacher, "there is no significant difference in teacher-parent relationships after the program was implemented at the beginning of the year."

Discussion

The findings of the study indicated that teacher job satisfaction and morale are at higher levels in the reduced class size classrooms. The program is very popular among school administrators and teachers in all the selected sites participating in this research. In addition, some evidence suggests that teachers are spending less time instructing whole classes and that the program is having an impact in the use of new teaching and

assessment strategies. Small group methodological approaches and diagnostic testing are now being used on a more regular basis. As we know, for example, the assessment of students' background knowledge plays a crucial role in the reading comprehension process. According to Taylor, Harris, and Pearson (1988, p. 226), "people comprehend reading material by relating the new information in the text to their background knowledge." The use of the diagnostic tests is an attempt to identify students' strengths and weaknesses on key reading skills or abilities.

Also, on the cognitive dimension, the teachers are spending less time on discipline and behavioral-related issues that permits to focus the instructional time on core curriculum content. As McCollum (1996) stated after her review of school-based reforms, most of the student achievement gains are attributable to a decreased teacher-to-student ratio and more individual attention. Most of the teachers agreed that more personal attention is given to students in a reduced class size environment. This, in turn, translated into fewer discipline events in the classroom.

This study supports Murphy and Hallinger (1989) analysis that educational administrators and policy-makers have to refocus the educational reform efforts in toward what is going to be taught, to whom, and by whom. Some of the elements identified as responsible for differences on student outcomes on prior research include among others the amount of time they spend in class (Murphy & Hallinger, 1989). Instructional time is becoming more and more a central concern. In lower ability schools, more instructional time is lost due to interruptions and simply managing behavior. The perception of teachers and principals is that CSR might help in this significant arena.

With respect to parent-teacher relations, the evidence suggests that there are higher levels of contact with parents. Epstein (1991), for example, argues the impact of teacher practices on parental involvement and student achievement. The issue is that teacher practices on parental involvement tend to transform and amplify cultural differences into deficits in school adaptation (Portes, 1996). In fact, schooling cannot be understood as independent of students' family background variables (Munoz & Dossett, 2001). Without enough knowledge of the students' family background, the incompatibility between the school and the family culture can unquestionably develop into literacy deficits (Tharp & Gallimore, 1988; Tharp, 1989).

The study also showed the existence of some challenges for the implementation of the CSR program. Some principals are experiencing problems in relationship to number of students enrolled and space limitation. In some cases, the school did not have an available room for a new teacher. Therefore, the school implemented collaborative models with itinerant teachers. In this regard, the CSR program created conditions –at least in the primary grades- where collaboration among professionals was clearly promoted. As Fullan (2002) argues, we have reasons to believe that going from a cellular to a collaborative model will help produce improvements in teaching and learning. Under the collaborative model, teacher focus collaboratively on how to improve teaching and learning in operational terms (e.g., state mandated assessment in core subject areas).

Another implementation matter found in this research was related to teacher knowledge on research-based effective techniques in foundational subjects. In this

regard, the CSR program needs to be complemented with instructional approaches that optimize teacher effectiveness in a class with fewer students.

From a methodological perspective, the participative-oriented evaluation approach used in this study was limited in at least two ways. First, the nature of case study research is to gain an in-depth, contextual understanding of one or more cases (Yin, 1994). Thus, direct generalizability to other school districts' CSR programs is not advisable. Second, this study did not include qualitative student data. The students' views were not included given that the purpose of this study was to understand the perspectives of stakeholders who were involved in the implementation and administration of the program over time.

Principals mentioned several caveats to make this program more successful: (a) fine-tune the recruitment and selection process of teachers hired to participate in the program; (b) provide an orientation program to new teachers on the school district mission, school's plans, and effective techniques in foundational subjects; and, (c) develop on-the-job training or conferences for all teachers on proper use of diagnostic and assessment tools and on successful teaching techniques for small groups. Teachers highly recommended the possibility to develop on-the-job training activities providing new methodological "tools" to take advantage of fewer students.

Reducing the class size is not an end in itself. CSR is also an expensive educational program that appears to be self-supporting in terms of prevention. It is estimated that for every dollar spent in prevention at this level, numerous dollars are saved in social costs later in life. The overall conclusion of this study is that the effectiveness of the class size initiative depends on teachers' willingness and ability to

change instruction styles when moving from large group to small group to take advantage of the new teaching context (Betts & Scholnik, 1999; Molner et al, 1999; Stasz & Stecher, 2000). The effectiveness of the CSR program might be related to setting the conditions for developing collaborative schools where collaboration among professionals becomes the norm. As such, it is recommended that teachers receive assistance in professional development, with expert itinerant educators modeling best practices and sharing theoretical knowledge (Karpov & Bransford, 1995).

Further research is needed to improve our understanding of the impact of the CSR program in terms of (a) actual changes in teaching practices and (b) student achievement gains, especially for disadvantaged students. For example, since job satisfaction is considered one of the fundamental predictors of job performance, it is probable to expect that teachers' higher level of satisfaction might be linked to changes in instructional practices. Changes in instructional practices, in turn, might allow for higher levels of student achievement. Another line of research needs to address the changes in the models of teaching under a CSR condition, i.e., how the change from cellular to collaborative models of teaching take place at the schools and how this, in turn, impacts student achievement. Forthcoming research will include achievement test data in relation to the present findings and observed changes in classroom teaching practices.

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